

EXHIBIT 17

DRUG-RELATED EMERGENCY ROOM VISITS, JANUARY 1- DECEMBER 31, 2017

DATA BRIEF: ANNUAL REPORT, 2017

CUYAHOGA COUNTY
BOARD OF HEALTH

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From January 1, 2017 through December 31, 2017, emergency rooms (ERs) in Cuyahoga County treated an estimated **9,191 patients** presenting with drug-related injuries (inclusive of prescription and illicit drug use)*. This amounts to an average of approximately **25.2 patients per day**. There was a **21% increase** in the number of patients seen for drug-related injuries in 2017 compared to 2016, with ERs treating almost 5 more patients a day. In order to account for daily fluctuations in visits, and to better understand the trends in drug-related presentations, a 7 day moving average was calculated (See *Technical Notes* section for details). Figures 1 and 2 (below) indicate that as the year progressed, the number of patients seen in emergency rooms for drug-related reasons increased during the first half of the year. There was a gradual, steady decrease throughout the second half of the year. Visits remained above **600 per month** for the entire year.

Number of Drug-related ER Visits by Day, January - December 2017

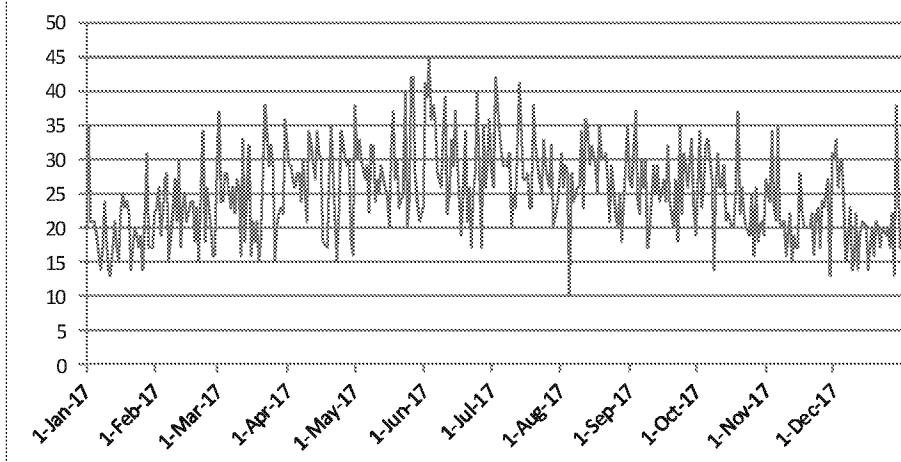
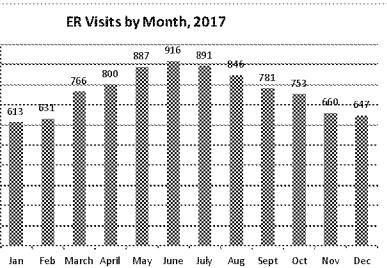


Figure 1. Drug-Related visits to the emergency rooms in Cuyahoga County by Day for January 1-December 31, 2017.



Drug-related ER Visits 7-Day Moving Average, January - December 2017

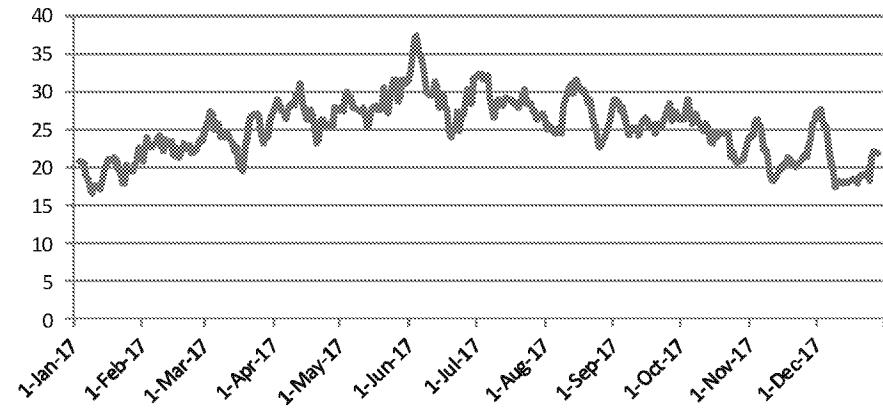


Figure 2. Drug-Related Visits to the emergency rooms in Cuyahoga County by 7-Day Moving Average for January 1-December 31, 2017.

*Data for this report were taken from EpiCenter, a web-based surveillance tool administered through the Ohio Department of Health. EpiCenter categorizes/classifies information from the chief complaint recorded in emergency room (ER) visits. Records of patients initially considered for inclusion in this report had visits that were grouped under the "Drugs" classifier. This included records that had "overdose" indicated. Records were excluded if the chief complaint was related to Tylenol/ acetaminophen, ibuprofen/ Motrin, or suicide (where this information was available) – see *Technical Notes* section for details.

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Percent of Drug-Related ER Visits by Hour of Day, January - December, 2017

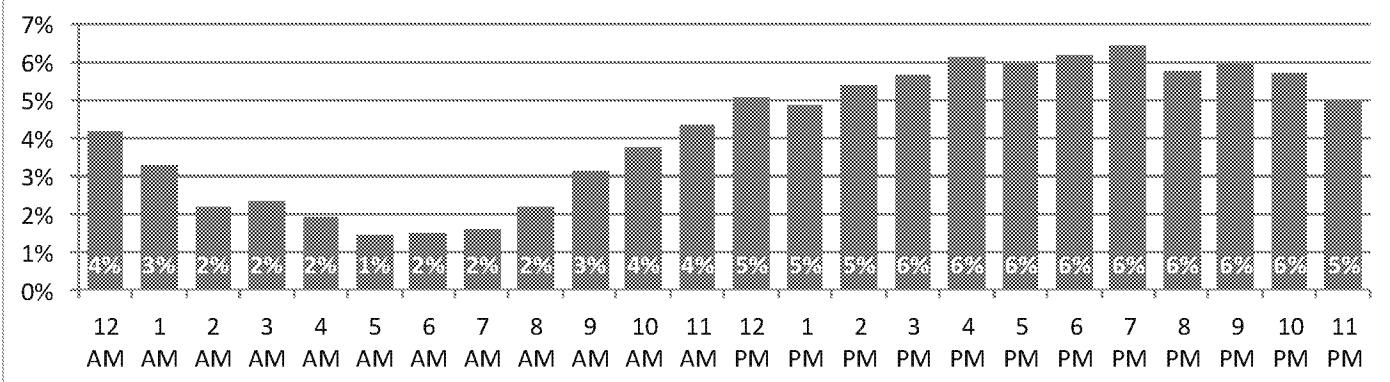


Figure 3. Percent of drug-related ER visits in Cuyahoga County by hour of the day for January 1-December 31, 2017.

Percent	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
Sunday	4%	4%	4%	3%	2%	2%	2%	1%	2%	3%	3%	4%	5%	5%	5%	5%	7%	5%	6%	7%	6%	6%	5%	5%
Monday	3%	3%	2%	2%	2%	1%	2%	1%	2%	3%	5%	5%	5%	5%	6%	5%	6%	6%	7%	7%	5%	6%	5%	5%
Tuesday	4%	3%	2%	2%	1%	2%	2%	1%	2%	3%	3%	5%	5%	4%	5%	6%	6%	7%	5%	8%	5%	6%	8%	4%
Wednesday	4%	4%	2%	2%	2%	2%	1%	1%	2%	3%	4%	3%	5%	5%	6%	6%	6%	6%	7%	7%	5%	6%	6%	6%
Thursday	5%	2%	2%	2%	2%	2%	2%	1%	2%	3%	5%	5%	5%	5%	6%	6%	6%	6%	6%	7%	6%	7%	5%	5%
Friday	4%	3%	2%	2%	2%	1%	2%	2%	2%	3%	3%	4%	5%	5%	6%	6%	7%	6%	6%	6%	6%	7%	5%	6%
Saturday	5%	4%	2%	3%	2%	1%	1%	2%	2%	4%	3%	4%	5%	5%	5%	6%	5%	7%	6%	5%	6%	5%	6%	5%
Total	4%	3%	2%	2%	2%	1%	2%	2%	2%	3%	4%	4%	5%	5%	5%	6%	6%	6%	6%	6%	6%	6%	6%	5%

Figure 4. ER visits for drug-related complaints by time of day and day of the week - "Heat Map." This figure shows the percent of drug-related chief complaints presenting to Cuyahoga County ERs every hour for each day of the week. **This indicates that more of these presentations occur in the afternoon and evening hours.**

Percent of Drug-Related ER Visits by Day of Week, January-December 2017

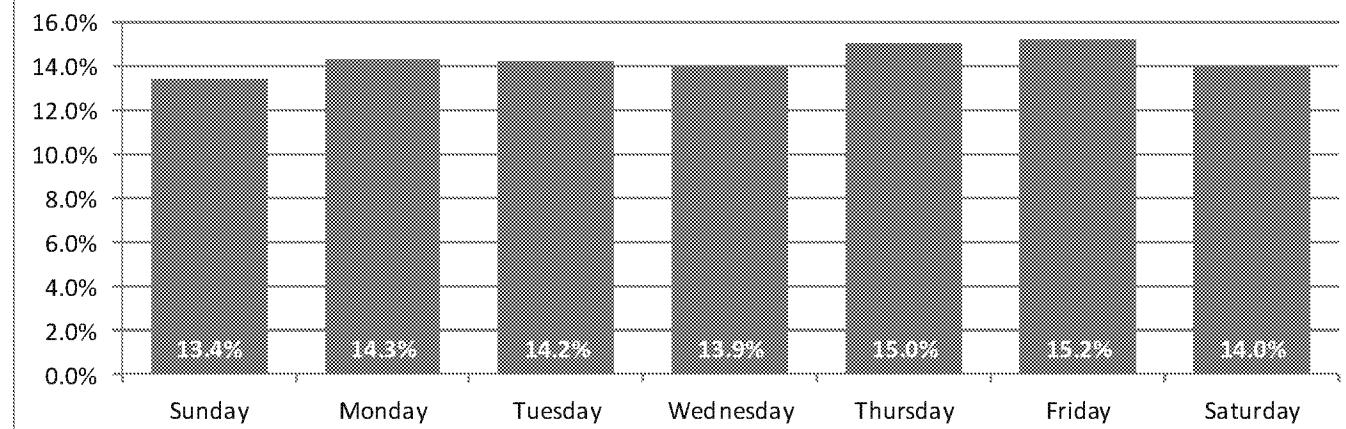


Figure 5. Percent of drug-related ER visits in Cuyahoga County by day of the week for January 1-December 31, 2017.

Demographic Profile:

The greatest percentage of drug-related emergency room visits in 2017 occurred in the **35-49 year old** category, which accounted for **30.8%** of presentations, followed closely by **25-34 year olds**, accounting for **27.2%** of presentations. (See Figure 6)

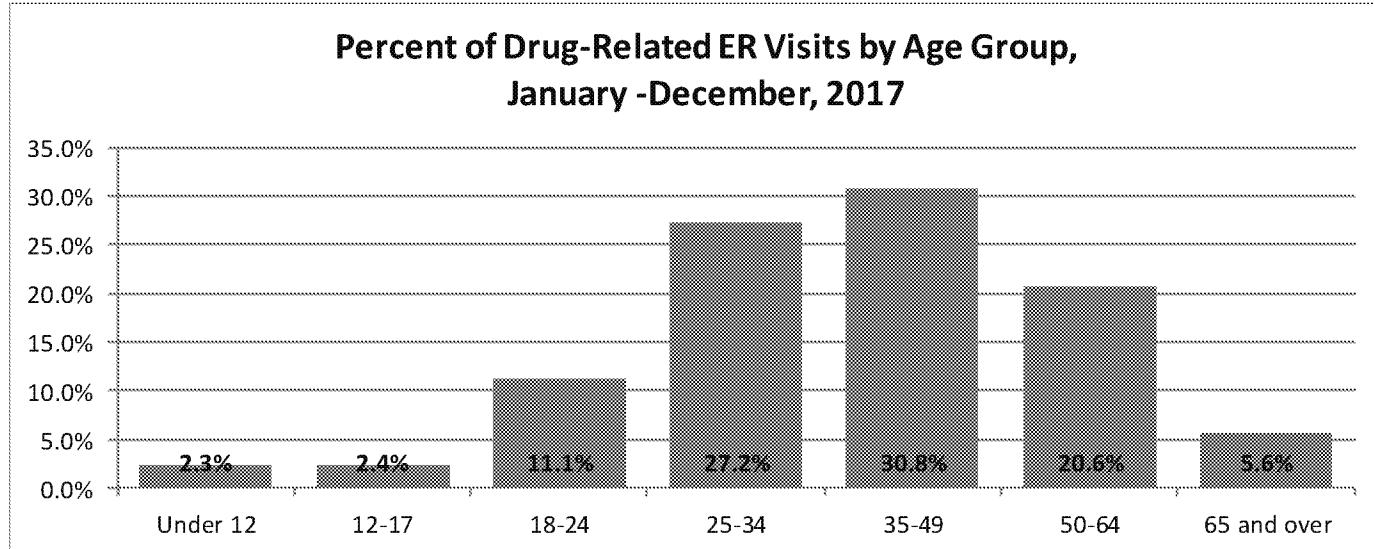


Figure 6. Percent of drug-related ER visits in Cuyahoga County by age group for January 1-December 31, 2017.

Overall, **35.8%** of patients with drug-related ER visits from January 1-December 31, 2017 were **female**, and **64.2%** were **male** (not shown). In looking at gender breakdown by age category (figure 7), males predominated in all age groups except **12-17 year olds** (females **65.0%** and males **35.0%**). This is consistent with 2016.

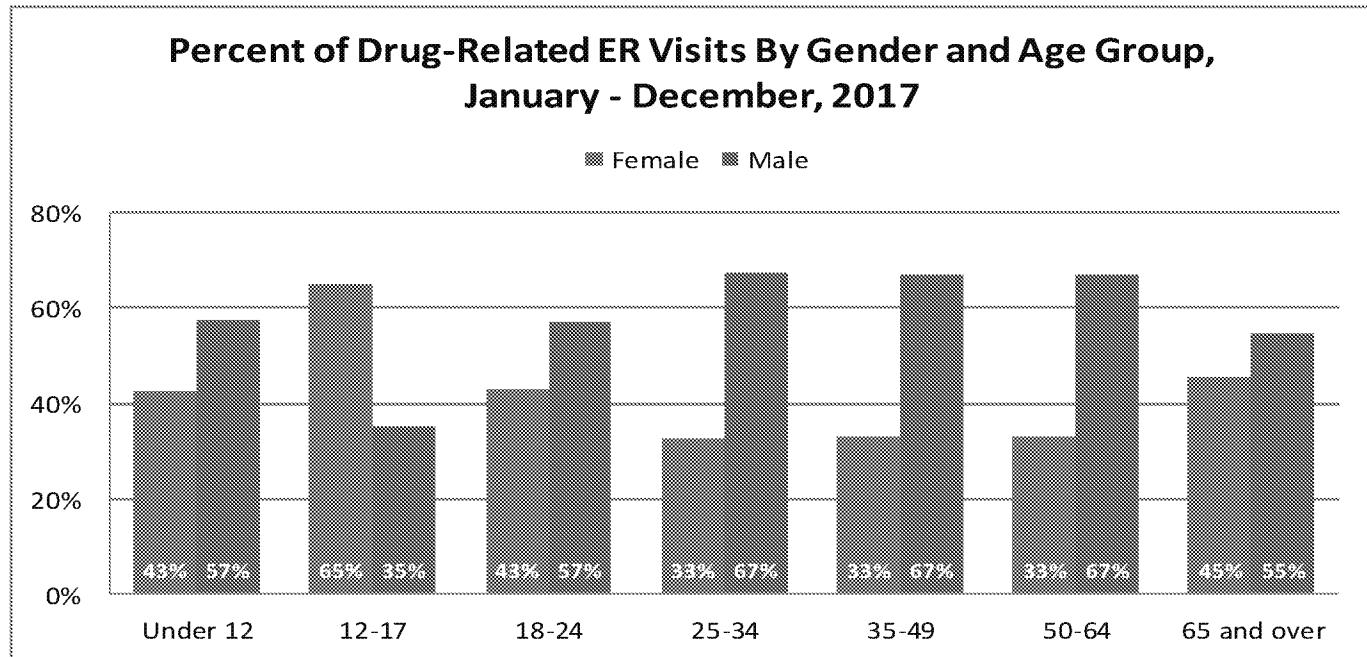


Figure 7. Percent of drug-related ER visits in Cuyahoga County by gender and age group for January 1-December 31, 2017.

Drug Category:

Where possible, attempts were made to quantify the number of visits associated with opioids, select prescription drugs, and select illicit drug use (**available for 2,529 of 9,191 records**) that were seen most often in emergency room presentations in Cuyahoga County, with the understanding that this information is incomplete and may under-represent actual totals. Table 1 indicates proportions of each drug by select category. There was a **56.7% increase** in cocaine in 2017 compared to 2016. Prescription opioids was the only drug category that showed a **decrease**.

Drug Category	n	%	% change from 2016
Heroin Only	1540	60.9	16.7
Opioid - General	583	23.1	32.5
Cocaine	254	10.0	56.7
Polysubstance	75	3.0	36.4
Prescription Opioids	43	1.7	(20.4)
Benzodiazepine	27	1.1	22.7
Fentanyl Only	7	0.3	16.7

Of note, those drugs included in the polysubstance category are as follows: multiple opioids, opioids plus benzodiazepines, and opioids plus cocaine. Additionally, those drugs included in the prescription opioids category are as follows: Percocet, oxycodone, morphine, Dilaudid, hydromorphone, Vicodin, hydrocodone, Opana, and oxymorphone.

Table 1. Drug category with number and corresponding percent of times it is mentioned in chief complaint data of ER visits in Cuyahoga County January 1-December 31, 2017.

Geography: The areas of the county with the **highest percent** of emergency room visits that were related to drug injuries is clustered in the following zip codes: **44102, 44105, 44109, and 44111** (Figure 8). These same zip codes also had the **highest number** of ER visits associated with select prescription medications and select illicit drugs (Figure 9).

Cuyahoga County Emergency Room Visits
Due to Drugs by Home Zip Code of Patient
January - December, 2017

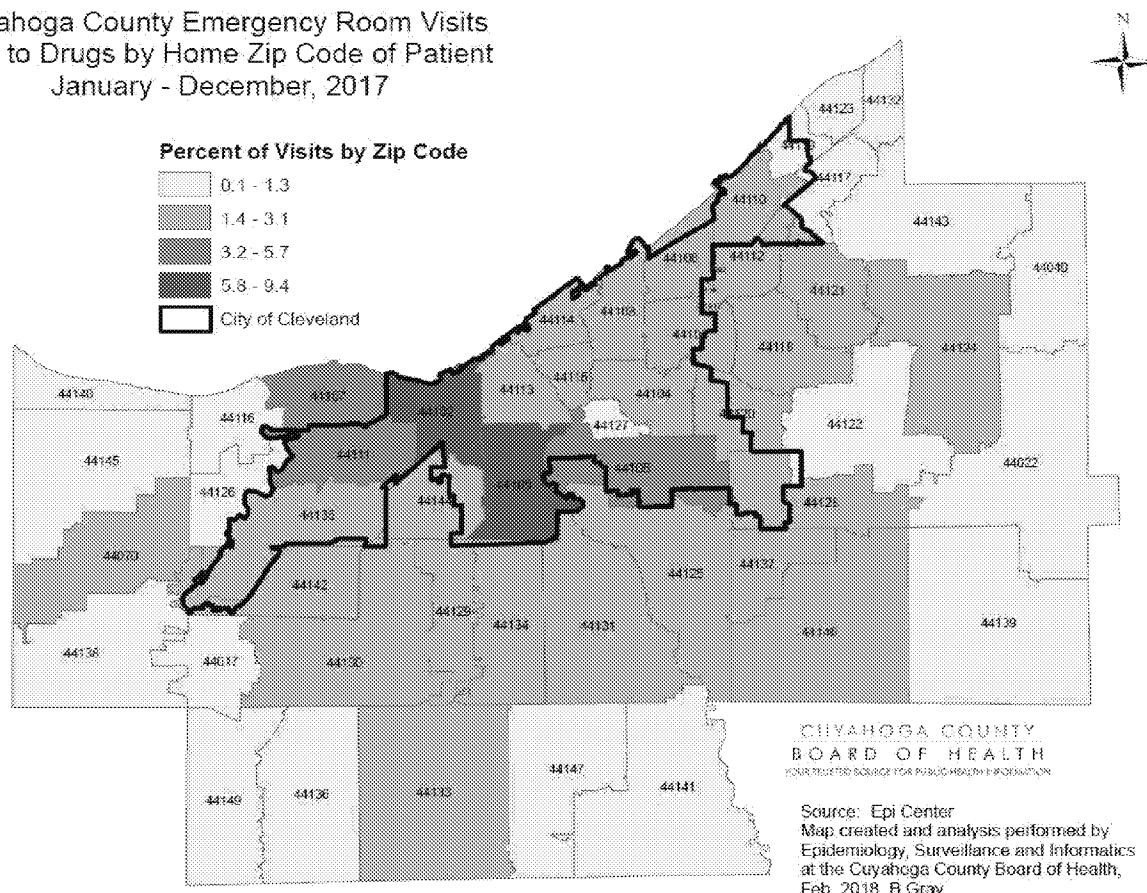


Figure 8. Number and percent of ER Visits Due to Drug-related Injuries By Zip Codes in Cuyahoga

Cuyahoga County Emergency Room Visits
Due to Select Prescriptions and Select Illicit Drugs
by Home Zip Code of Patient
January - December, 2017

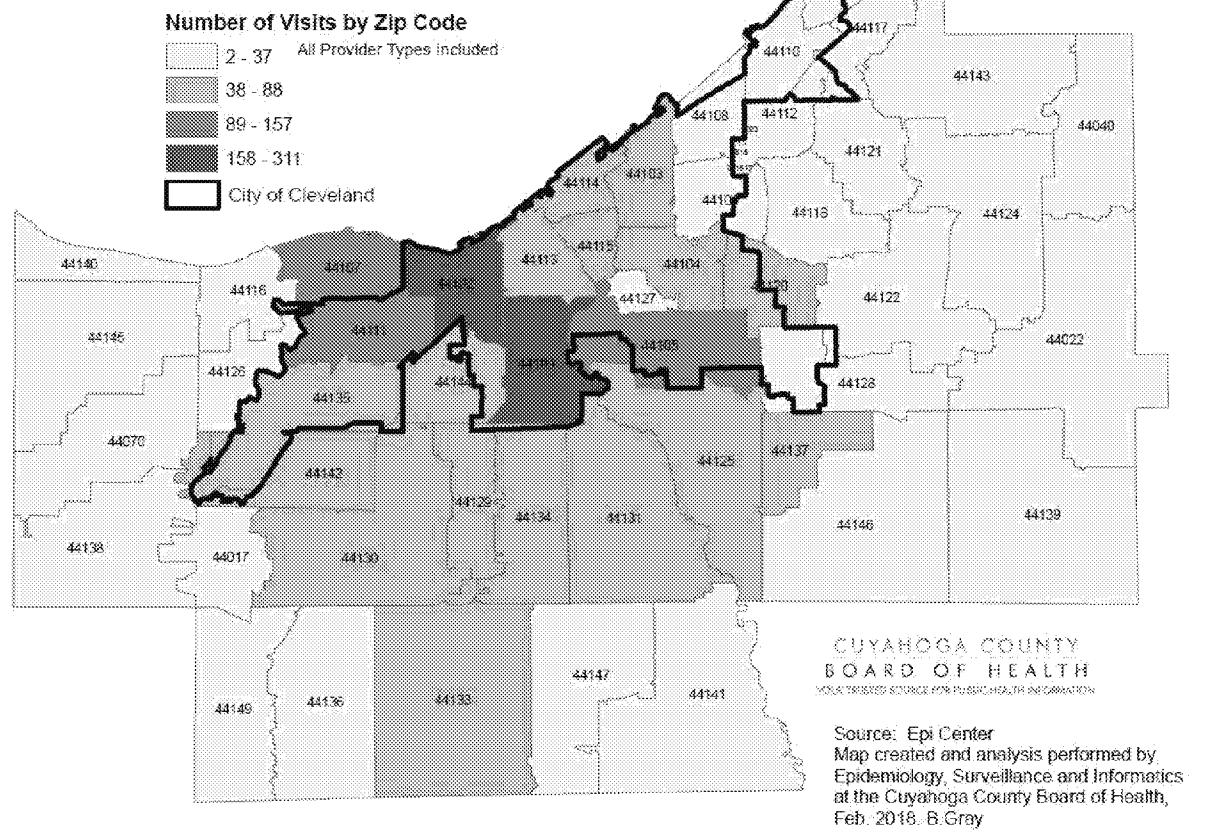


Figure 9. Number of ER Visits Due to Select Prescription and Select Illicit Drugs By Zip Codes in Cuyahoga County for January 1-December, 2017 (see Table 1).

TECHNICAL NOTES

7 day moving average – To calculate the 7-Day moving average, an average was calculated using a span of seven days around any given date. For example, to calculate the 7-Day moving average for January 4, values from January 1 through January 7 were used. For January 5, values from January 2 through January 8 were used, etc...

Included cases – There were a significant number of cases that did not have “overdose” indicated in the chief complaint but had some indication of prescription drug use and/or illicit drug use suggested. Because of this, the report was not limited to only cases with “overdose” indicated. Additionally, attempts to quantify the number of visits associated with opioid and select prescription and illicit drug use were made (see Table 1).

Excluded cases – Attempts were made to remove records that had a chief complaint indicating the following: Tylenol/acetaminophen, ibuprofen/Motrin, or suicide (where this information was available).

Special Data Considerations

It is important to note that this report only represents estimated figures as opposed to full and/or final counts of the drug related emergency room visits. This is due to the fact that the information is based on initial chief complaint and not the final diagnosis that can result after a patient has been examined and/or had additional tests performed.